

REMARKS

This Amendment is filed in response to the Office Action mailed on June 28, 2007. All objections and rejections are respectfully traversed.

Claims 1-4, 6-14, and 21 are currently pending.

Claim Rejections – 35 U.S.C. §103

At paragraph 3 of the Office Action, claims 1-4, 7, and 10-14 were rejected under 35 U.S.C. §103 as being unpatentable over Pflaester, US Published Application No. 2003/0235744 hereinafter Pflaester, in view of Fuglevand et al., US Patent No. 6,030,718, hereinafter Fuglevand.

Applicant's invention as set forth in representative claim 1, comprises in part:

1. A method of fabricating a membrane electrode assembly for use in a fuel cell, comprising:
 - (A) providing a mold that includes a first and second mold plate adapted to impart a desired shape to induce compression to decrease the thickness of components in the mold and to apply pressure substantially evenly across an entire active area of a membrane electrode assembly being fabricated in the mold;
 - (B) providing a lead frame, including at least a first lead frame component that is adapted to be received into said mold, *wherein the lead frame includes a current collector with a raised surface where the raised surface provides a minimum limit to the thickness of components in the mold;*
 - (C) assembling a protonically conductive membrane with catalyst coatings on each of its major surfaces onto said first lead frame component;
 - (D) placing said lead frame containing said membrane into the mold;

- (E) compressing said second mold plate onto said first mold plate;
- (F) introducing a moldable material in communication with said mold plates; and
- (H) allowing the moldable material to cure in said mold to solidify and form a frame around said membrane to produce a membrane electrode assembly for use in a fuel cell.

By way of background, Pflaester discloses a sealing arrangement for fuel cells that includes two separator plates, membrane electrode assembly (MEA). The MEA is set back from the lateral surfaces of the cell separator plates that create a sealing gap. An elastic sealing element encloses the separator plates and a sealing strip extends into the sealing gap to form a gas-tight seal.

Fuglevand discloses a proton exchange membrane fuel cell power system that includes a plurality of fuel cell modules. Each module includes a pair of current collectors, with each current collector on opposite sides of the MEA.

Applicant respectfully urges that Pflaester and Fuglevand, taken alone or in combination, do not teach or suggest Applicant's claimed novel *wherein the lead frame includes a current collector with a raised surface where the raised surface provides a minimum limit to the thickness of components in the mold*. In further detail, in Applicant's claimed invention the lead frame integrates current collectors and other components of the fuel cell into a mold to be sealed. The raised surface on the current collector is a shut off face for the mold plates. The raised surface prevents the mold from compressing too far creating "flash" between the mold plate and the current collector. When flashing occurs, thin webs of surplus plastic are undesirably formed between mating surfaces.

There is no disclosure in either Pflaester and Fuglevand of a raised surface on the current collector, as claimed by Applicant. Fuglevand merely discloses the use of current collectors that have four layers, but Fuglevand does not disclose a raised surface on the current collector to limit compression. Additionally, Pflaester does not disclose current collectors nor does Pflaester suggest a fuel cell has a minimum compression limit.

Accordingly, Applicant respectfully urges that Pflaester and Fuglevand, taken alone or in combination, are legally insufficient to make obvious the presently claimed invention under 35 U.S.C. § 103 because of the absence of the Applicant's claimed novel *wherein the lead frame includes a current collector with a raised surface where the raised surface provides a minimum limit to the thickness of components in the mold.*

At paragraph 5 of the Office Action, claim 6 was rejected under 35 U.S.C. §103 as being unpatentable over Pflaesterer in view of Fuglevand, and in further view of Draper et al., US Patent No. 5,273,838, hereinafter Draper.

Claim 6 includes the limitation “*wherein each lead frame includes a current collector with a raised surface, where the raised surface provides a minimum limit to the thickness of components in the mold,*” which as stated above is not taught or suggested by Pflaester and Fuglevand. Additionally, Draper does not disclose or teach the raised surface on the current collector.

At paragraph 6 of the Office Action, claim 8 was rejected under 35 U.S.C. §103 as being unpatentable over Pflaesterer in view of Fuglevand, and in further view of Montminy, US Patent Application No. 2004/0211668, hereinafter Montminy.

Applicant respectfully notes that claim 8 is a dependent claims that depends from an independent claim that is believed to be in condition for allowance. Accordingly, claim 8 is believed to be in condition for allowance.

All independent claims are believed to be in condition for allowance.

All dependent claims are believed to be dependent from allowable independent claims.

Applicant respectfully solicits favorable action

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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